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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/935,158 | 08/23/2001 | Jang-Kun Song | 06192.0203.NPUS00 | 9225 |

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| EXAMINER |
|---|
| RICHARDS, N DREW |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2815 | |

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/935,158 | SONG, JANG-KUN | |
| | Examiner | Art Unit | |
| | N. Drew Richards | 2815 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *04 August 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *10-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 6-8* is/are rejected.

7)☒ Claim(s) *3-5 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

1. Applicant's election with traverse of claims 1-9 drawn to a subcombination in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the search and examination of the entire application could be made without serious burden. This is not found persuasive because the search for the subcombination claims does not require a search for all the limitations of the combination claims and the search for the combination claims does not require a search for all the limitations of the subcombination. There is subject matter in either search not required for the other and to examine the entire application would require a burdensome search of two inventions including different subject matter and different subclasses. Thus, a search and examination of the entire application is deemed a serious burden.

The requirement is still deemed proper and is therefore made FINAL.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 recites the limitation "the substrate" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al. (U.S. Patent No. 6,198,516 B1).

Kim et al. disclose in figure 3, for example, a substrate for a liquid crystal display comprising, first wires 11,12 formed in one direction on the substrate, second wires 14a,14b intersecting and insulated from the first wires, pixel electrodes 16a,16b formed in pixel regions defined by the first wires and the second wires, and switching elements 20a,20b connected to the first wires, the second wires, and the pixel electrodes, wherein an interval between two adjacent second wires has a predetermined dimension that repeatedly varies from one set of adjacent second wired to the next and a side of the pixel electrodes adjacent to the second wires is shaped in a pattern identical to the second wires such that the pixel electrodes have a wide portion and a narrow portion. The repeatedly varying dimension between adjacent second wires is seen along a direction parallel to the first wires where alternating second wires have a protrusion 18a that reduces the distance between wires 14a and 14b and the pixel electrodes have an identical pattern such that they have a thin portion next to the protrusion and a wide portion throughout the remaining portion of the pixel electrode.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 6,198,516 B1).

Kim et al. teach a substrate for a liquid crystal display in figure 3, for example. Kim et al. does not explicitly teach the display being formed on an insulating substrate. However, this limitation is considered obvious as it is well known in the art at the time of the invention to form LCD pixels and circuitry on insulating substrates such that they may be formed on flexible plastic substrates and may be formed on a large area not commonly achievable with a silicon substrate, thus allowing flexibility in device use and allowing the device to be formed to large dimensions. Kim et al. teach gate lines 11 formed on the substrate and storage capacitance lines 12 formed on the substrate. Kim et al. does not explicitly teach a gate insulating layer formed over the gate lines and storage capacitance lines. However, this limitation is inherently taught as figure 3 shows the data lines above and insulated from the gate lines and storage lines and one of ordinary skill in the art would recognize that an insulator would be formed to provide proper insulation between the conductive lines to allow proper device operation. Kim et al. also teach data lines 14a,14b formed over the gate lines and storage capacitance lines and intersecting the gate lines and storage capacitance lines. Kim et al. does not

explicitly teach a passivation layer over the data lines. This limitation is considered obvious as one of ordinary skill in the art would form a passivation layer over the data lines so that the pixel electrode could be formed on a flat surface spaced above the data lines and gate lines and so that the data lines and gate lines would be protected during formation of the pixel electrode. Kim et al. also teach pixel electrodes 16a,16b over the data lines and underlying circuitry, the pixel electrodes having curved edges adjacent to the data lines to form a wide portion and a narrow portion.

With regard to claim 7, two adjacent pixel electrodes are arranged alternatively changing the positions of the wide portion and the narrow portion.

8. Claims 2 and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 6,198,516 B1) as applied to claims 1, 6 and 7 above, and further in view of Lee et al. (U.S. Patent No. 6,266,118 B1).

With regards to claims 2 and 8, Kim et al. teach all the limitations of claims 1, 6 and 7 from with 2 and 8 depend, respectively. Kim et al. does not teach the pixel electrodes including one or more apertures for dividing the narrow portion following a direction of the second wires (data lines) and one or more second apertures for dividing the wide portion following a direction of the first wires (gate lines).

Lee et al. teach a liquid crystal display comprising first wires, second wires insulated from and intersecting the first wires, and pixel electrodes formed in pixel regions defined by the first wires and second wires, the pixel electrodes having a narrow portion and a wide portion. Lee et al. teach one or more apertures for dividing the

narrow portion following a direction of the second wires (data lines) and one or more second apertures for dividing the wide portion following a direction of the first wires (gate lines). This is taught in figure 3, for example.

Kim et al. and Lee et al. are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to form the pixel electrode with the first and second apertures as taught by Lee et al. The motivation for doing so is to improve transmittance and aperture ratio and prevent color shift. Therefore, it would have been obvious to combine Kim et al. with Lee et al. to obtain the invention of claims 2 and 8.

***Double Patenting***

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claim1, 2 and 6 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4 and 5 of copending Application No. 10/217977. Although the conflicting claims are not identical,

they are not patentably distinct from each other because claims 1,2 and 6 of the instant application are anticipated by claims 4 and 5 of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

11. Claims 1, 2, and 6 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of copending Application No. 10/036305. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 2 and 6 of the instant application are anticipated by claim 6 of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Allowable Subject Matter***

12. Claims 3-5 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: Prior art of record fails to teach, disclose, or suggest either alone or in combination, storage capacitance wires including first branch wires and second branch wires overlapping the first apertures and the second apertures, respectively, or the

second apertures dividing the wide portions of the pixel electrodes into three region where a center region has a width twice or longer than the outer regions.

***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hiraishi (U.S. Patent No. 6335771 B1), Hanazawa et al. (U.S. Patent No. 5953088), Ikeda (U.S. Patent No. 6172729 B1), Kim et al. (U.S. Patent No. 6317176 B1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Drew Richards whose telephone number is (703) 306-5946. The examiner can normally be reached on M-F 8:00-5:30; Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

NDR

GEORGE ECKERT
PRIMARY EXAMINER